

Weather comm supports mobile battlefield Airmen

FROM FINWS

First-In Weather System



TO R-BGAN

Regional Broadband Global Area Network satellite



Why is it needed?

Existing operational weather capability is centered on a Tactical Very Small Aperture Terminal, or common user communications (i.e., NIPRNET, SIPRNET) when available. Both capabilities meet the bandwidth requirement when deploying in austere environments, however, these communication services can take days or even weeks to be up and operational and common user communications capabilities have the challenge of tying weather support operations to fixed locations. Weather is a key contributor to decision making and force dominance, but in most cases weather data is only valuable when it is provided in real-time. A solution to fill the gap was needed to provide the first-in, on-the-move warfighter with a mobile capability as soon as boots hit the sand.

How does it work?

The Air Force Weather Agency ultimately selected the L-Band broadcast capability because it was the only service deliverable within defined cost and schedule constraints. Leveraging this core communications capability and using an end-to-end systems approach, AFWA teamed with commercial L-Band service providers to develop a warfighting capability called the First-In Weather System. FInWS consists of a ruggedized laptop, an inexpensive commercial satellite radio, digital data converter, and 2 types of antenna—all weighing less than 25 pounds. FInWS provides a robust field-deployable one-way data dissemination system. A two person team went to a remote location to run an end-to-end live broadcast test and develop a system checklist and user manual. FInWS proved to be lightweight, compact, quick-to-assemble, and mission capable.

What's the status of the technology?

Air Staff approved the purchase of 100 systems, and teams at AFWA received components from several vendors and have repackaged them for shipment as an integrated kit. Meanwhile, as the hardware was being assembled, the AFWA team worked out the processes needed to automatically build and transfer the

weather data every hour. Combat weather teams on the ground know when the transmission will take place and when to turn on their systems. The entire cycle from AFWA to the field takes less than 10 minutes to complete. There are 24 transmissions a day averaging 450 MB per month. Despite FInWS's successes in the field, there are limitations of a small coverage area and only a one-way push capability.

What's next?

AFWA believes a recent capability offered by Defense Information Systems Agency, called the Regional Broadband Global Area Network, addresses the need for a two-way global first-in, on-the-move capability. The R-BGAN system configuration is similar to the FInWS equipment consisting of a ruggedized laptop, but the antenna, and data decoders are contained in a single laptop sized unit—reducing weight to less than 15 pounds.

R-BGAN provides a two-way satellite communications Internet access capability allowing the user to log on and quickly upload and download required information as though they were connected at their home base. Currently R-BGAN is limited in speed and the area of coverage. As system upgrades come on-line, projected by 2006, users can expect to see speeds of up to 432 kbps and global area coverage.

U.S. Air Forces in Europe's Directorate of Weather spearheaded the transition from FInWS to R-BGAN by purchasing three terminals and using them actively in Qatar during 2004. USAFE's experiences with the R-BGAN system prompted the purchase of an additional 23 units to replace FInWS.

"The R-BGAN capability is our next step in supporting the first-in, mobile battlefield Airman. Moving from a FInWS warrior push to an on-the-move Internet access is definitely a leap forward and will greatly enhance decision dominance in future warfighting capability," said Col. David Handle, Director of AFWA Communications and Information.

Source: Mr. Bradley Kassube, AFWA

**Techno
Gizmo**